Vol. 2. January, 1921. [No. 1.

AGRICULTURAL CIRCULAR

ISSUED BY THE

DEPARTMENT OF AGRICULTURE
FIJI

EDITED BY

THE SUPERINTENDENT OF AGRICULTURE

IMPERIAL BUREAU
18 OCT. 1921
OF MYCOLOGY

Annual Subscription, 3/-

Price Fourpence

By Authority: S. Bach, Government Printer, Suva.

1921.

DEPARTMENT OF AGRICULTURE.

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EDITORIAL NOTES—JANUARY, 1921.

When the first number of the Circular was issued a year ago, it was anticipated that after one year it would be possible to enlarge its scope and to include notes of the condition of markets, the results of meteorological observations, times of tides and other information of general use or interest to planters. The realisation of this will have to be postponed for the present owing to a depleted staff.

The circular issued on 7th January, 1920, calling attention to the proposed publication of a monthly circular the invited contributions on matters. This has met with no response, and is again brought to the notice of readers. There are surely very few progressive planters who do not, during the routine of their business, come across some matter which is of more than momentary interest and from which something is to be learnt. In many cases the matter may appear to be of very minor significance, but it may be remarked that some very important results have followed casual observations in the field, such, for instance, as the discovery of wilt-resistant cotton. Every owner of bananas, of coconuts or other plants of economic value is in a position to make valuable observations and the points to which special attention should be directed are the departures from normal. These comprise such points as crops greater or less than the average, a greater or less degree of resistance to the attacks of pest or disease, early or late fruiting, having in all cases reference to what one considers to be the usual, the normal or average. Observations such as those referred to make no special demand on the planter's time since they can be made during the ordinary visits to the cultivations.

The processes used in tilling the soil have been known for centuries and have been gradually improved slightly as experience has suggested. Whether any vast improvement is possible in our cultural operations is very doubtful, but most certainly improved strains of plants are to be looked for and more successful methods of counteracting losses. It is of great importance that the utmost publicity be given to any means whereby an improvement may be introduced in the returns from agricultural industries. If a planter comes across an improved strain of the plants he is cultivating the demand for plants of that strain should result in considerable actual gain, but apart from that there is not the same opportunity for turning discoveries and improvements in agricultural processes to account as there is in, say, manufactuirng industries where the use of some special process or formula is often responsible for a large part of the profit and the details of it are most carefully kept secret. With processes for combating pest or disease, it is to the utmost advantage to each individual engaged in an industry that all new methods should be published as widely as possible, and it is specially important that outbreaks of pests or disease should be promptly reported as well as appearances which seem to indicate the attacks of unknown pests.

The Inspector of Fruit, Auckland, writing under date 10th November informs the Inspector of Produce that the pineapples from Fiji by a certain steamer were badly infested with live mealy-bug, and the fruit should be properly fumigated here. The same result and the same advice was given in respect of certain pineapples forwarded by another steamer about the same time to Wellington. In accordance with this advice, pineapples by subsequent steamers were fumigated with charges of cyanide and acid of double the quantities used for fumigating bananas. A letter of 22nd December from the Fruit Inspector, Auckland, reporting on pines subjected to such treatment states that the mealy-bug was destroyed. The Fruit Inspector, Auckland, recommends depending entirely on fumigation with strong charges of fumigating materials for destroying this pest, and it is important to remember that if such fumigating (or indeed any fumigation) is to be as effective as intended, care must be taken that the fruit is enclosed by a covering sufficiently air-tight to enable the gas to remain in contact with the fruit long enough to kill the pests.

GREEN MANURE CROPS AT NASINU DURING 1920.

The following results were obtained at Nasinu Station with certain cowpeas during the year 1920:—

Nasinu No.	Name and Source.	Planted.	Reaped.	Weight.	Area cut.	Calculated yield p. a.
				lb	feet	lb
1822	Victor Cowpea (Dept. of Agriculture, U.S.A.)	April 8	July 1	55	12 × 12	16,484–17,088
Do.	Do.	Sept. 28	Dec. 12	39	12 × 12	11,495–12,099
1826	Alabama Velvet Bean (Dept. of Agr., U.S.A.)	April 8	July 9	55	12 × 12	16,484–17,088
Do.	Do.	Sept. 29	Dec. 9	88	16 × 16	14,804–15,144
1890*a*	Cowpea (local brown with dark edge).	Sept. 29	Dec. 3	53	12 × 12	16,330–15,826
1890	Cowpea (local red)	Sept. 28	Dec. 3	39	12 × 12	11,495–12,099
1891	Cowpea (local white with black eye).	Sept 29	Dec. 4	43	12 × 12	12,706–13,310
1893	Cowpea (local chocolate & pink)	Sept 29	Dec. 4	46	12 × 12	13,613–14,207

The plot in which these plants were grown was a poor red loam, on slopes of rolling land. The plots were two chains long by 12 feet wide except 1826 which was 16 feet wide, and a square about the middle of each plot was cut for weighing. The germination of all seeds was good, and the seeds were regularly placed at 2 ft. × 1 ft., the extra trouble required being compensated for by the uniform growth of vine and the reduced quantity of seed required as compared with broad casting.

The plots when cut were free from dew or rain water, the weights reaped may therefore be taken as representing the weight of green matter forming the crops. No attempt was made to weight more accurately than to the nearest pound, because 40 lb or 50 lb of fresh green matter containing something like 80 per cent. of water might, during daylight, in the hot weather, quite easily lose half a pound or more of moisture during the cutting and weighing.

With an area of 12 ft. × 12 ft. one pound represents some 300 lb per acre. In the yield per acre column, the equivalent in pounds per acre is worked out and the yield given as from 300 lb below this to 300 lb above for plots where an area of 12 ft. × 12 ft. was cut, and 170 lb above and below for the later planting of 1826 in which 16 ft. × 16 ft. was cut.

The 1822 and 1826 are new varieties of cowpeas obtained from the Department of Agriculture, U.S.A.; of the others, 1890*a* is in common use as a green manure on sugar plantations, and is also used for food purposes by Indians. The others were obtained locally. There was some mixture of other varieties in the supplies as obtained, but before use the seed was picked over, hence the crops were pure ones.

In Australia in a pure cultivation of cowpea, a good yield is said to be from 2—14 tons of green manure per acre, hence the Nasinu results can be considered only as fair.

COTTON SEED SUPPLY.

The following extract from a letter from the Imperial Commissioner of Agriculture for the West Indies relating to the attempt to introduce Sea Island cotton seed in quantity from the West Indies is published for general information. The first request for seed was sent by telegram on 17th July, when three-quarters of a ton were asked for. This was subsequently increased to five tons. A telegram dated 16th November, 1920, informed us that the five tons of seed had been shipped *via* New York, but that Pink Boll Worm had been found in Montserrat after the seed had been shipped. Messrs. Huth Gillespie, the New York Agents of the Imperial Department of Agriculture, were then asked to consult the Federal Horticultural Board who advised the seed being returned to the country of origin. Instructions were accordingly cabled to the Agents. The letter from the Imperial Department of Agriculture outlines the action taken by that Department on behalf of Fiji. We must cordially agree with the remark in the letter quoted, that, although the matter has been attended by misfortune, it is indeed fortunate that the pest was discovered in Montserrat in time to prevent the importation of what may have been infected seed. Hence Fiji is still one of the few cotton countries free from this serious pest.

From the Imperial Commissioner of Agriculture, Barbados, to the Colonial Secretary, Fiji.

Barbados, 24th November, 1920.

Arrangements had been made for the supply of the five tons of seed required in equal amounts from Montserrat and St. Kitts some weeks ago, but considerable difficulty was experienced in arranging for its shipment. The New York route was finally selected as being likely to ensure the quickest despatch as the seed could be consigned to Messrs. Huth Gillespie, Inc., the agents of this Department in New York, whereas no reliance could be placed on its being handled quickly if shipped *via* Colon. Considerable delay was caused by the necessity of obtaining a permit from the Government at Washington for the Quebec Steamship Company to accept the seed and for its transhipment at New York.

4. The shipping difficulty having been satisfactorily settled, both lots of seed were shipped in due course by the s.s. "Parima" on 9th November from St. Kitts, where the Montserrat seed had to be sent by sloop as the "Parima" did not call there.

5. Before the ship arrived at New York a new pest was discovered by the Curator, Montserrat, attacking cotton bolls, which on being submitted to Mr. Ballou for examination, was identified by him as Pink Boll Worm. A similar suspicious pest has subsequently been found in St. Kitts, and Mr. Ballou is now engaged in making investigations in those islands.

6. The discovery of this pest necessitated the taking of immediate action to warn the authorities in New York and Washington of its occurence in the West Indies and this was accordingly done.

7. In a telegram received from the Chairman of the Federal Horticultural Board, Washington, in reply to one sent by this Department, Mr. Marlatt stated as follows:—"Freedom infestation cannot be accurately determined by inspection nothing so far found strongly advise destruction of shipment or return to origin"; and on its receipt Messrs. Huth Gillespie were instructed unless they had already received instructions from Fiji to endeavour to sell the seed to the best advantage either in England or Canada, otherwise it should be destroyed.

8. It is a matter for regret in the circumstances set forth in your telegram that the attempt to supply the seed required for Fiji should have proved to be abortive. On the other hand it is fortunate that the discovery was made before the seed reached its destination since it was thus possible to avoid the risk of introducing Pink Boll Worm into the Colony, where I understand it does not occur, and thereby causing considerable disappointment and loss to the planters.

REPORT BY INSPECTOR OF PRODUCE.

The inspection of bananas and other fruit offered for export is carried on by the Inspector of Produce and an assistant under Regulations made under Ordinance No. XXI of 1906.

Bananas.—During the year 1920, 142,040 bunches and 80,435 cases were exported to Australia, and 3,484 bunches and 228,247 cases to New Zealand, making a total of 145,524 bunches and 308,682 cases, or equivalent to a grand total of 762,888 bunches. The output for the year shows a total of 148,166 bunches more than 1919. It is very difficult to make a comparison of these two years as the output of 1919 was greatly reduced owing to the influenza epidemic, and again this year there was no steamer to Australia during January, February and October. For purposes of comparison the export per month of bananas for the last five years are given below:—

Month.	1916.	1917.	1918.	1919.	1920.
January ..	145,817	187,758	107,607	43,833	36,861
February ..	119,642	127,428	69,488	33,654	33,344
March	180,115	112,520	124,485	61,268	84,744
April	129,585	118,602	143,864	36,136	77,504
May	134,341	117,871	86,375	61,661	69,157
June	136,129	102,384	84,382	25,205	68,928
July	126,795	118,044	69,062	36,963	48,332
August	177,362	86,766	63,669	76,308	59,650
September ..	135,647	38,449	86,249	44,590	94,127
October	147,480	79,425	112,174	58,121	37,822
November ..	143,965	144,373	108,253	63,219	62,863
December ..	74,488	119,876	(no boat)	73,764	89,556
Totals ..	1,651,366	1,353,496	1,055,608	614,722	762,888

Largest shipment.—The largest shipment during the year was 47,614 bunches by the s.s. "Levuka" in December. This is the largest shipment since the record of 70,266 by the s.s. "Levuka" in November, 1918. This large difference is mostly due to the neglect of the bananas caused by the influenza epidemic and the absence of steamers. However, the bananas seem to be improving and provided there is a regular service of steamers and no hurricane in 1921, we can again look forward in the next three months to shipments approaching 60,000 bunches.

Condition of shipments.—The shipments for the year have all turned out in fair condition, with one exception—the "Levuka" shipment in March which was overheated.

Prices.—The prices in Australia have been very uncertain throughout the year, averaging from 6s. to 10s. per bunch and 10s. to 20s. per case. In New Zealand prices have been much more satisfactory as many of the shippers made f.o.b. contracts ranging from 9s. to 14s., according to the time of the year. There is no doubt that the f.o.b. contract is the more satisfactory and, provided that shippers look after the standard of their fruit, there is no reason why all the fruit should not be sold f.o.b.

Freights.—There has again been a rise in freights which took place early in the year, as in the following list:—

Sydney, insulated—From 1s. 8d. to 1s. 10d. per bunch, and 3s. to 3s. 4d. per case.; non-insulated—From 1s. 7d. to 1s. 9d. per bunch, and 2s. 10d. to 3s. 2d. per case.

Melbourne, insulated—From 1s. 10d. to 2s. per bunch,and 3s. 2d. to 3s. 6d. per case.

This rise of 2d. per bunch and 4d. per case reduces the shippers' returns by some £2,500 on the output for the year.

Freights to New Zealand rose twice during the year—from 1s. 5d. per bunch and 3s. 1½d. per case first to 1s. 7d. and 3s. 6½d. and then to 1s. 9d. per bunch and 3s. 11½d. per case. This also meant a reduction in the returns by some thousands of pounds during the whole year. Still the high prices which have been usual have perhaps compensated for this to some extent. The regular boat was taken off for the October trip, but the shipping company put on another steamer on the shippers agreeing to pay 5s. freight per case, an increase in freight on total cargo taken by that boat of nearly £1,000 upoh the above rate.

Pineapples.—There were 1,457 cases of pines shipped to all ports.

Citrus fruit.—No citrus fruits were shipped owing to the strict regulations prevailing in New Zealand and Australia.

Other products.—The other products shipped were maize, 1,350 sacks; and kumalas, 635 sacks.

Scale.—This at one time threatened to be a serious menace to the fruit trade, but of late years has greatly diminished until at present it is hardly to be found. All plantations from which bananas are cut for shipment are supposed to be thoroughly sprayed with a spray approved in the Diseases of Plants Regulations, and each shipper before he is allowed to ship his bananas is obliged to furnish the Inspector with a certificate to that effect. This certificate also sets forth when and where the fruit is cut. As a further precaution each shipper has to furnish another certificate to the Inspector to the effect that he certifies that all his fruit has been thoroughly fumigated with hydrocyanic acid gas for three hours. The Inspector then satisfies himself that no live scale exists on the fruit when he endorses this certificate to that effect, and presents same to the purser to be handed to the Inspector in Australia.

Banana certificates.—After the bananas for Australia have been shipped the bill of lading, signed by the purser of the steamer, is presented to the Inspector, who issues a certificate for the shipper, stating that the fruit described on the bill of lading has been inspected, is clean and sound, and, to the best of his knowledge and belief, is free from live scale. A copy of each certificate is filed in the office of the Inspector.

The New Zealand authorities only require a certificate to the effect that the manifested shipment of bananas has been fumigated with hydrocyanic acid gas for three hours. This certificate is handed to the manager of the steamship company who passes it on to the purser of the steamer, thus guarding against delay in delivery which might happen if the document were sent by post, an important matter, as the fruit is not allowed to be landed in Auckland until the certificate is forthcoming.

In Australia the Inspectors either destroy the fruit right off or send it to be fumigated if the certificates are not to hand. The expense of cartage, fumigation and delivery, and still further, the handling and delay, would be fatal to the profit to be made on the fruit.

During the year 372 certificates were issued to licenced shippers, and many more to passengers.

Goods for Samoa and Tonga.—In accordance with the requirements of the government of these countries, goods such as mats, tappa and sometimes personal effects are fumigated by the Inspector in a properly constructed chamber with hydrocyanic acid gas for two hours. A fumigation label is then attached to each article and a certificate is issued to the owner who pays the necessary fees to the Inspector of Produce. The certificate is handed to the purser of the steamer before the articles are allowed on board. Fees for this work during the year amounted to £29 11s. 6d., and was paid into general revenue.

Inspection of imported plant matter.—This work is carried on by the Inspector of Produce and an Assistant at Suva, the Harbour Master at Levuka and an officer of Customs at Lautoka. The inspection is made under Regulations made under Ordinance No. VI of 1913. At Suva 593 certificates were issued, representing 27,555 packages. Of these, 74 were destroyed and 17 fumigated. Fees for this, amounting to £1 13s. 9d., were paid into the Treasury. Forty-seven visits were paid to the post office to inspect seeds, &c., arriving in the mails; 169 parcels were inspected, of which three were fumigated and none destroyed.

Articles from Tonga and Samoa.—Plant matter from Samoa is probihited and special attention is given to other matter imported from Samoa, and also from Tonga, which may have been in contact with matter from Samoa on board the steamer.

A very small quantity of mats and tappa arrived from Samoa, but a large quantity arrived from Tonga. All articles from Tonga and Samoa are admitted on the production of a certificate of fumigation from those countries, and as a further precaution are all carefully examined and if thought necessary are refumigated.

EXTRACTS FROM REPORTS OF INSPECTORS.

INSPECTION OF FRUIT.

The R.M.S. " Niagara " took 287 cases of bananas and 69 cases of pine-apples to Auckland on 3rd December. The fruit was of excellent quality.

The s.s. " Levuka " for Sydney took 11,315 cases and 15,508 bunches of bananas for Melbourne, and 2,830 cases and 3,816 bunches for Sydney, equivalent to 47,614 bunches. Rejections amounted to 1,660 cases and 491 bunches, being 8 per cent. of the shipment, and all for ripeness. The ship's holds were clean and the handling and storing carefully carried out Dunnage was plentifully used and ample air ventilation arranged. The cool air was delivered at a temperature of 24° F. when loading commenced. No live scale was found, and all punts had the appearance of having recently been fumigated.

The s.s. " Navua " loaded fruit for Auckland on 15th December. The cargo amounted to 23,348 cases and 672 bunches of bananas, a total of 41,378 bunches. Rejections amounted to 2,511 cases and 10 bunches, equivalent to 12·6 per cent. of the shipment. Most of the rejections were for immaturity. The immature nature of a quantity of the fruit was no doubt due to the attractions of the Christmas market in Auckland, which would be attained by this steamer. Six punt loads were rejected on account of the presence of proportion of a inferior fruit, but re-packing after sorting over was permitted. With the exception of the fruit in these punts, the fruit was of good quality. The ship's holds were clean and in good order, handling and storing were carefully carried out. Special care was taken with the ventilation owing to the wet weather. No live scale was found. The case timber was good, but some carelessness in nailing was noticed. Some of the punts appeared to require more care in the matter of baling, as the pumps with which the punts are provided do not always appear to be satisfactory in their working. Shippers are advised to leave sufficient space to permit of a man getting to the bottom of the punt for baling out. Two hundred and sixty cases of pineapples were shipped, which, on account of representations from Auckland, were submitted to fumigation from a heavy charge of cyanide.

INSPECTION OF PRODUCE.

The Inspector of Produce reports, during December, 1920, the following particulars in connection with his work:—Bananas to Australia—Bunches, 19,324; cases, 14,145; equivalent to 47,614 bunches; to New Zealand—Bunches, 672; cases, 20,635; equivalent to 41,942 bunches; a total of 89,556 bunches exported. Pineapples, 439 cases; kumalas, 55 sacks. No plant matter or passenger's baggage from Samoa or Tonga required treatment.

NOOGOORA BURR.

Mr. H. V. G. Rivington reports on a visit to the morth coast of Vitilevu inspecting for Noogoora Burr as below:—

From 29th November to 18th December visits were paid to the holdings of 7 Europeans, 23 Indians and the lands under control of 9 Fijian towns. The distribution of the burr and the action was as follows:—

European.—Number of visits, 7; holdings on which burr was found, 3; In all cases the weeds seen were young plants which were at once pulled up.

Indian.—Number of visits, 23; holdings on which burr was found, 8. All young plants; in six cases the plants were very young seedlings. Instructions given to have them pulled out later.

Fijian.—Number of visits, 9; holdings on which burr was found, 2. Young plants appearing. Instructions given to have them pulled out.

This part of the island had little rain towards the end of the year and the burr is not found until the rain sets in and enables seeds in the ground to germinate. All the plants seen were young seedlings and in some instances they were too small to be conveniently pulled up. Instructions were given to pull them up when the plants are larger, and regular visits will be made at intervals to see that this is done.

COCONUT SCALE.

Mr. M. A. Forsyth reports as follows:—

Inspection of vessels.—Fifty-seven vessels were inspected during the month of December, and material was destroyed in nineteen cases. There have been several further cases of vessels evading the regulations, all of which I hope to have before the court in due course. I secured a conviction against one of the offenders, and the sentence, six weeks without the option of a fine, will make others think twice before offending. I expect to deal with further cases this month.

Coconut scale.—Owing to bad weather and continuous rains, inspection far afield has not been possible. Reports from outlying islands have been satisfactory. A boat chartered to visit Batiki, Nairai, Koro and Gau will give me an opportunity of inspecting these places very shortly. At Bureta the scale on the trees appears to be dead in a great many instances and the rains have given the trees a much healthier appearance.

Clidemia hirta.—I have made excursions on either side of Levuka and have found the weed in small areas within a few miles. I warned occupants of the legislation dealing with this, and advised them to commence its eradication before it gained a strong hold. On the other side of the island, where it is so dense, it is spreading towards Lovoni Valley where cattle raising has been commenced. I am attempting to induce the natives to start work upon it.

DEPARTMENTAL NOTES.

Captain M. J. Reidy has been selected by the Right Honourable the Secretary of State for the Colonies for appointment as Government Veterinary Officer, Fiji. Captain Reidy has reached Australia and will, it is hoped, arrive by the first steamer sailing for Fiji.

Mr. H. V. G. Rivington, Second Grade Inspector of Plantations, has been appointed First Grade Inspector of Plantations, with effect from 1st January, 1921.

Mr. M. B. Wright, Assistant Inspector of Produce, resigned from the Public Service from 31st December, 1920.

Miss E. Thomas, Sixth Class Clerk, resigned from the Public Service from 31st December, 1920.

Mr. M. C. Graham has been appointed to act as Inspector of Stock, Suva, during the absence on leave of Mr. J. S. McNair.

INSPECTION OF VESSELS.

The following list shows the numbers of vessels reporting for inspection under the coconut scale regulations and the number of cases in which material had to be destroyed during the month of January, 1921:—

Port.	*No. of vessels inspected.*	*Cases in which material was destroyed.*
Suva	4	—
Levuka	57	19
Lautoka	4	1

Agricultural Associations in Fiji.

THE COUNCIL OF PLANTERS OF FIJI.

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THE SOUTHERN DISTRICTS PLANTERS' ASSOCIATION.

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